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Mazin Enwiya
Remedial Project Manager
United States Environmental Protection
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Subject: Review comments on United States Environmental Protection Agency's Region 5 Draft "Preliminary Planning Report" Ellsworth Industrial Park Site, Downers Grove, Illinois, January 2006, prepared by Weston Solutions, Inc.

Dear Mr. Enwiya:

On behalf of the Ellsworth Industrial Park Respondents ("Ellsworth Group") Michael Baker Jr., Inc. ("Baker") is submitting the following general and specific technical comments on the United States Environmental Protection Agency (USEPA)'s Region 5 draft "Preliminary Planning Report" Ellsworth Industrial Park Site, Downers Grove, Illinois, January 2006, prepared by Weston Solutions, Inc. ("PPR"). In addition to this submittal, general comments of the Ellsworth Group are also being submitted this date, and the two submittals should be considered together by the Agency.

GENERAL COMMENTS

1. It is Baker's understanding that the Agency's FIELDs Group and contractors have been working for quite some time to develop the data base consisting of all the data collected over the past five plus years at and about Ellsworth Industrial Park ("EIP"). It is our further understanding that this data base, which the Agency declared to be complete and in good form in early January 2006, is the foundation for much of the draft PPR; and more specifically, this data base was used to prepare the Agency's data gap analysis and to identify the data that the Agency is proposing to collect during the OU1 RI through the Statement of Work ("SOW").

Since the database is the basis for the Preliminary Planning Report (PPR) and subsequent planning, the accuracy of the data entry, database associations, and quality of the source data is critical to the decisions made prior to and during the proposed field activities. The source data should be evaluated via a Data Quality Assessment and the database entries and associations should be verified and documented.

2. It does not appear that the conceptual site model (CSM) was adequately integrated into the PPR figures. As a result, plume limits appear to be overestimated and plume flow directions are inaccurate, soil concentration contours are exaggerated, and other potential source areas are excluded without explanation.

3. The PPR only provides limited monitored natural attenuation (MNA) parameter collection - just 6 samples out of the thousands of sample points proposed. The field investigation program should collect the data within the EIP that will be required for evaluation of the MNA remedial option and fate and transport modeling.

4. While we understand that the draft PPR relies heavily on the TRIAD approach, the draft PPR appears to use the TRIAD approach as a substitute for development of an appropriate (and possibly less expensive) investigation plan based on the thorough pre-planning contemplated by TRIAD. While TRIAD properly allows for flexibility in the field that should improve overall efficiency, it is not intended to displace the basic requirement that a PPR should explain the rationale for and specific goals to be achieved as a result of sampling in the various Subareas. Revising the PPR to include this information would lead to a more refined and focused SOW (Appendix C) and ultimately would save the Agency and the Ellsworth Group both time and money.

5. Based on the Agency's willingness to consider additional investigation areas, as expressed at out January 19th meeting, we are proposing three additional areas: (a) the area east of the Park; (b) the DGSD old lagoon area and the area to the northwest; and (c) the area northeast of the Park where TCE and PCE have been detected in soils in areas where gas stations and autobody shops have historically operated.

SPECIFIC COMMENTS

<u>Section 1 page 9, on the third line,</u> the reporting unit is incorrect. The correct reporting unit for the (119) PCE soil sample concentration is ug/KG (not mg/Kg). ✓

Section 2.0 Conceptual Site Model

<u>Section 2.2.2 .1</u>, the criteria listed in the text does not match all of the criteria listed on Table 2-6, please add Region 3 RBCs. ✓

<u>Section 2.5.1</u>, the following sentence should be modified by adding the underlined portion "The Village of Downers Grove supplies municipal water to the nearby residents <u>and this will not change</u>".

Section 2.5.1 page 37:

- Because the only constituents of concern are volatile organic compounds, inhalation of dust is not applicable to this site. Thus, the inhalation pathway should be limited to volatilization from soil samples.

- The consumption of home grown produce is not applicable to OU1, which is limited to the EIP and does not include any residential settings.

- This section indicates that the land use classification may include residential and recreational. OU1 is a commercial/industrial site; therefore residential land use is not applicable as a current or future use of the site. If recreational activities are present at OU1, they would occur only in association with the St. Joseph Creek. The land use classification for St. Joseph Creek has not been presented.

Section 2.5.2 page 38, this section should be revised to state that the impact of releases in OU1 on the environment will be determined through a baseline ecological assessment of OU1 and St. Joseph Creek. Upon completion of the baseline ecological assessment any complete ecological exposure pathways will be identified.

Section 3.4 Fate and Transport

This section discusses the data gaps associated with reductive dechlorination processes (i.e. Natural Attenuation) occurring at the site. However, no specific plan is presented to address this data gap, other than to say it is related to the data gap in the geologic/ hydrogeologic characterization of the site. The plan only includes six samples for limited MNA parameters in soil and for some limited aquifer hydraulic conductivity testing. The PPR should include a plan for collecting MNA data needed from OU1 in order to later assess the potential suitability of MNA as a remedial option at the site.

Such a plan should, at a minimum, include an initial screening plan to access the geochemical environments where reductive dechlorination is plausible. (Reductive dechlorination is the initial degradation process most likely to be occurring at this site.) There are groups of parameters; dissolved oxygen, nitrate, and sulfate (electron acceptors consumed), iron II, chloride and methane (metabolic by-products), and alkalinity and oxidation reduction potential (ORP) that can be used to generate contour maps. These maps can be used to provide visual evidence of biodegradation and a visual indication of the relationship between the plume and these parameters.

It is necessary to collect these data at locations representing the range of geochemical environments at the site. This would include within and outside of the plume(s) and in impacted and unimpacted soils. The appearances of daughter products within the sampled media at the site are indicative that degradation is occurring in the OU1 area. Biodegradation is an important process that degrades contaminants in the subsurface; the rate of biodegradation is one of the most important parameters to determine for input into a solute fate and transport model. The extent of distribution both vertically and horizontally of contaminants, daughter products, electron acceptor, and metabolic by-product concentrations are critically important for documenting the occurrence of biodegradation and in fate and transport modeling.

Section 4.2, page 2 bullets 3 and 4 should have the term RAOs, which refer to remedial action objectives, replaced with screening levels throughout the document.

Section 4.2, page 2, in the sixth line after the bullets the phrase "and the aquifer can be restored for future beneficial use" should be deleted. The goal(s) of remedial actions at the site will be established in the RI/FS report. In addition, 3 lines further down the sentence beginning with "To restore groundwater quality in the area surrounding OU1" should be deleted to reflect the preceding comment.

Section 4.3.2 the first line refers to a "series of perched aquifers", which is inconsistent with previous sections of the PPR that refer to perched water-bearing zones as it is unlikely they would meet the definition of an aquifer.

4.4.2 Utility Corridor Investigation

In this section, the draft PPR calls for investigating manholes, sumps, etc. with an onsite HAPSITE mobile GC/mass spectrometry equipped with a real-time vapor sampling wand. This effort may not contribute significantly to the understanding of the impact of the utility corridors on chemical transport. If solvent was disposed into sewers, the majority would go to the waste water treatment plant (WWTP) and be gone. The potential is that solvent leaked from the pipes via cracks or joints into the bedding material, where it could encounter permeable zones and migrate into soils and eventually groundwater. Consequently, measuring vapors within the piping may be useless, particularity as these releases occurred so long ago. If the utility corridors are a source for residual contamination, it is because of what remains in the backfill material around the pipes.

While it is agreed that the utility survey needs to be completed; scoping should be undertaken to focus the areas where utilities and the trunk sewers to the WWTP may be of concern. A rapid screening can be accomplished using a PID (with summa samples collected as needed). An assessment of the trench backfill material in the focus areas would likely yield more useful information. This could be accomplished using direct push testing (DPT) or passive vapor sampling techniques.

4.4.3 Passive Soil Gas Survey

This section states that soil gas results will be used to select where additional intrusive drilling and sampling of soil and groundwater is warranted and that passive soil gas sorbers can provide information concerning contamination depth as well as close to the surface, yet this is contradicted in Sections 4.5.1 and 4.5.2 that states:

> "The conductive sand zones are generally overlain by surficial clay layers of 5 to 15 feet. These layers could affect the approach and findings of soil vapor investigation activities, and should be addressed in the design of the investigation."

A review of Section 3.4 Passive Soil Gas Survey of Appendix C does not provide any information regarding how this issue will be addressed; rather, it simply states that unless utility corridor surveys indicate the need for greater depths, the passive soil gas samples will be collected from 3 feet below ground surface (bgs). Under this circumstance, passive soil vapor results from within thick sequences of clay may have limited usefulness as a tool for identifying additional sampling points. Considering the high cost estimate for the passive soil gas sampling survey and its problematic implementation, its application should be limited, in the first instance, to beneath buildings and within utility corridor backfill material. The potential shortcomings of this technique, acknowledged by the Agency (see excerpt above) should be considered before its use is extended to other areas.

<u>4.4.4 Sub-Slab Monitoring.</u> For this investigation it is important to place the sorbers within any granular backfill beneath the buildings or around utility lines, not necessarily at 3 feet deep.

4.4.5 Soil Sampling

The draft PPR specifies the use of DSITMS for on-site analysis of field samples and states that samples will be selected for DSITMS analysis through the use of a PID. This may not be a reliable method for selecting samples for analysis, considering that a review of the boring logs versus contaminant concentrations shows that even where the laboratory results were tens or hundreds of thousand ppb values, the PID reading was rarely above zero and almost never exceeded 0.5 ppm.

This potential lack of reliability is further compounded by the statement that membrane interphase probe (MIP) equipment will remain accessible if concentrations are encountered that range too high for effective characterization by the DSITMS method, considering that the draft PPR acknowledges that MIP analyses have generally had limited success in delineation of potential source areas. In order to assess the feasibility of this combined approach it is necessary to have information regarding the upper limit of chemical concentrations that can be measured using DSITMS, and what data quality objective (DQO) is achieved using DSITMS – none of which is included in the draft PPR.

As the draft PPR contemplates that the investigation is going to proceed in a sequential fashion, the use of an on-site laboratory using Method 8260 or off-site laboratory with quick turnaround time may be the better alternative. The advantage of using one of these methods is the high quality of data that will be generated. Considering that the sample capacity of the DSTIMS method is only 30 samples per day and that once soil sources are delineated, confirmation soil samples will be collected for analysis using Method 8260 anyway, it is not clear that any advantage will be derived from use of the DSITMS method at this site.

4.4.6 Groundwater Sampling

The PPR states that grab groundwater samples will be analyzed using the on-site DSITMS and that split groundwater samples will be collected at a high initial frequency for laboratory analysis (via Method 8260) until correlations can be developed with the DSITMS method. Clarification needs to be provided in the draft PPR for the correlation procedure. Generally, how many split samples are required to establish good correlation between DSITMS and actual groundwater concentrations? What method will be used to determine if there is good correlation; statistical methods, correction factors?

The PPR also states that special collection techniques will be used to collect geochemical parameters for the assessment of contaminant transport and MNA in the wells. The PPR should provide a list of the geochemical parameters and the sample frequencies and the proposed collection techniques.

Figures

A significant variation in lithology was observed in closely spaced borings on some of the cross-sections. For example, on section D-D' the lithology in boring CPT53 is shown as sand/gravel through a 35 foot interval whereas in boring BD-12D, which is an adjacent boring, this unit is identified as silty clay. All locations where there is a significant disagreement between lithology descriptions in closely spaced borings should be listed as a data gap and evaluated for significance. Lithologic descriptions are also inconsistent (for example see Figure 2-6). The lithology shown for CPT-67 on section F-F' is not the same as the lithology for the same boring CPT-67 on section G-G'.

The cross-sections appear to have been constructed arbitrarily from east-to-west and north-to-south orientations without regard to groundwater flow and contaminant migration directions. Cross-sections need to be constructed along flowpaths with contaminant concentrations superimposed. This method can effectively illustrate how both groundwater and contaminants move horizontally and vertically within the subsurface. In addition, not all available borings were used in constructing the cross-sections.

The soil contaminant contour maps are problematic because soil concentrations are generally not linear in their distribution. Contouring using a linear interpolation between a detected value and nondetect can be misleading. For example, on Figure 2-18 the elevated soil TCE value at 5400 Janes Avenue results in contours showing a large area of impacted soil based on only one result. It is likely that the areas of soil impacts shown on these figures are exaggerated.

Figure 2-34, which presents the groundwater contaminant contours in the intermediate aquifer, shows the 2.1 ug/L PCE result in BD-2 inside the 25 ug/L PCE contour. This should be corrected and a new figure generated.

Figure 2-34 is also misleading in that it portrays OV-01I as monitoring the same water-bearing zone as BD-2I, but cross-section J-J' (Figure 2-08) clearly shows that they are in vertically separate zones. The same error occurred when constructing Figure 2-09. The groundwater elevations in OV-01I and BD-2I are vastly different and should not be mapped together (unless the third dimension is taken into account). OV-01I is closely connected with the bedrock and should be mapped with that unit. This has reversed the groundwater flow direction near OV-01I from southeast to northwest.

Figure 2-34 shows the area just west of 2500 Curtiss Street as a closed contour around BD-4 (TCE 9.2 ug/L). Why was this constructed as a separate plume and not included as part of the larger plume to the south and east? There are two samples (one about 300 feet south [LD-1], and one about 300 feet east [EIP-9]) that have TCE at 3.1ug/L and 6.0 ug/L respectively. These values are similar and there are no intervening nondetects between these three locations. Additionally, this small plume is delimited by nondetect lines on the northwest side with no nearby data to support this depiction. If the contour lines were established using the nondetect values (about 800 feet to northwest) the contours would likely extend much farther to the northwest. Additional wells may be needed to access the groundwater impacts to the northwest of well BD-4 (north of Curtiss Street/west of Walnut Avenue, including the WWTP and other nearby properties).

Areas to Be Sampled

In the Ellsworth Group's meeting with the Agency on January 19, 2006, the Agency expressed a willingness to investigate other areas that are suspected to be source areas contributing to the chlorinated plumes. The Ellsworth Group has identified three areas that should be included in the OU1 RI/FS, and incorporated into the draft PPR:

1. <u>Further investigation of the area east of Ellsworth Park</u>, including:
    a. Existing public water supply wells screened in the bedrock aquifer should be sampled (e.g. DG Well No. 6, and the Maple Hill wells).

b. Potentially relevant non-community water supply bedrock wells should be identified and included for sampling. One example is the irrigation well located just east of the park/ball field north of the Maple/Springside Avenues intersection (IL Well No. 4301610).

c. Installation of two new bedrock wells:

- Along Curtiss Avenue near the route of a 42" sewer line and in the area north of the northeast corner of the "footprint" of the former waste water treatment plant, and

- Near St. Joseph's Creek and within the "footprint" of the former waste water treatment plant (WWTP).

The location of the proposed new wells and the approximate locations of other relevant features have been superimposed on Figure 5 of Weston's "screening study" of August 2004 and were submitted to the Agency on January 10, 2006.

2. Further Investigation of the old DGSD lagoon area. BD-4(i), which is located in the DGSD WWTP lagoons, shows groundwater detections of 1.2 ppb TCA and 9.2 ppb TCE. The well is upgradient of the areas slated for further examination, yet the U.S.EPA has not included any proposed plans to investigate this area or the source of these detections. While some soil samples were taken within the old lagoon area, they were very shallow. This area may require the grid sampling approach that is planned for the other Subareas, and that at a minimum soil and groundwater samples should be collected from a variety of depths.

3. Further investigation of the area just to the northeast of EIL. There have been previous detections of TCE and PCE in the soil at various depths in the area north of the railroad tracks and east of Belmont (as reflected on the prints downloaded with the 1/18/06 file from the Weston ftp site entitled "Ellsworth Industrial Park – Phase II Report." Historical use of the properties included gas stations, automotive repair and autobody painting. This area may require the grid sampling approach that is planned for the other Subareas, and that at a minimum soil and groundwater samples should be collected from a variety of depths.

Human Health Risk Assessment

Based on the existing information, the only complete exposure pathways for OU1 are the following:

- Construction Worker – direct contact, incidental ingestion, and inhalation of ambient air
- On-site Outside Worker - direct contact, incidental ingestion, and inhalation of ambient air
- On-site Trespasser - direct contact, incidental ingestion, and inhalation of ambient air
- On-site Indoor Worker - inhalation of ambient air

Sampling plans should address the data requirements to complete the pathway specific evaluation. For example, collection of enough 0 to 1 foot soil data to evaluate for direct contact and incidental ingestion since very few samples were collected during previous investigations.

The vertical soil sample selection criteria were not included in the PPR, but may be critical for evaluation of risk at the site.

There is no complete exposure pathway for groundwater in OU1. In the event that fate/transport or MNA modeling demonstrate that the OU2 plume will not expand beyond the water supply area (i.e. there will not a complete pathway), then the soil to groundwater cleanup criteria would be eliminated for the OU1 soils. The elimination of this pathway would reduce the existing soil exceedances to four PCE samples and seven TCE samples in OU1.

Ecological Risk Assessment

A Baseline Ecological Assessment should be undertaken in lieu of the proposed full Ecological Risk Assessment.

If you have any questions regarding these comments, please contact me or Mr. Mark J. Knight at 219-736-0263,

Very truly yours,

Michael Baker Jr. Inc.

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